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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,623	03/01/2004	Roger P. Juneau	P035055US (98029.4P11)	8830

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/790,623

Applicant(s)

JUNEAU ET AL.

Examiner

Walter F. Briney III

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/20/04 and 07/30/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juneau et al. (US Patent 6,254,526) in view of Kobayashi (US Patent 4,385,977) Steinemann (US Patent 4,945,342) and Tyers et al. (US Patent 4,144,889).**

**Claim 1** is limited to "a hearing aid adapted for use in the ear canal of a user."

Likewise Juneau teaches a hearing aid known as a completely-in-the-canal (CIC) type. See Abstract. Figures 14-17 provide views of a fully assembled CIC hearing aid. The hearing aid comprises a "plate member" 22 with a "plurality of hearing aid components," e.g. 25-35, mounted thereto. The components of Juneau's hearing aid include at least a "battery" 31, a "microphone" 25, an "amplifier" 34 and a "speaker" 35. Bonded to the plate 24 is filler material 50, which forms a "soft polymeric body" that is of sufficient thickness to closely conform to both the ear canal and at least one of the components." See Abstract and column 7, lines 34-60. Since material 50 is liquid when it is injected into mold 15 and precisely represents the human ear canal, it follows logically that the resulting solid structure is "substantially solid and free of void spaces between at least one of the components and the ear canal." It is noted that figures 18 and 19 of Juneau are exactly the same as figures 18 and 19 of the instant application, which depict that

the hearing aid of figures 14-17 “minimizes feedback” as recited. Moreover, the hearing aid of Juneau includes a “wiring harness” 38 best seen in figure 7. The harness interfaces at least the speaker 35 and amplifier 34 components using wires 39. While Juneau indicates that the wires 39 in the harness are a five-strand Litz cable, i.e. a “multi-strand cable of multiple wires,” Juneau does not indicate that the Litz cable comprises “plated stainless steel wires” or that the cable is “coated with a bio-compatible insulation.” However, this deficiency is overcome by an obvious modification.

First, it is noted that Juneau fails to specify the material of the Litz cable, so one of ordinary skill in the art would be required to make an appropriate choice for a soft hearing aid with a highly flexible body that conforms to motion of a user’s ear canal. See column 7, lines 55-60. While copper is a popular conductor choice, Kobayashi indicates that its resilience is quite low, and requires increased thickness if it is to be flexed. See column 1, lines 11-19. In solution, stainless steel wires are used to preserve the minimum thickness. In addition, the stainless steel is plated to maximize conductivity. See column 1, lines 7-10 and lines 20-25.

It would have been obvious to one of ordinary skill in the art at the time of the invention to embody the Litz cable of Juneau with plated stainless steel wires as taught by Kobayashi since Juneau fails to specify the material of the Litz cable and because plated stainless steel provides superior resilience over copper, which is highly important in a hearing aid where the Litz cable will be flexed due to user jaw motion.

Second, it is noted that Juneau fails to specify whether the Litz cable is coated with insulation. Official Notice is taken of the fact that insulating conductors was notoriously well known to those of ordinary skill in the art of not just hearing aids but all electronic circuit development. Especially in hearing aids, where the spacing between conductors is minimal, insulation is important to prevent shorting. In the particular hearing aid of Juneau, flexing motion of the hearing aid could easily cause a short between the wires 39. Moreover, insulation of conductive wires inserted into a body for medical purposes was well known as evidenced by Steinemann in column 1, lines 53-63. If no insulation is provided the chance for conductive failure increases dramatically, and may result in conductive short-circuiting to the user's body. See column 2, lines 38-45. Since Juneau fails to indicate whether insulation is used, Juneau fails to disclose what type of insulation to use. However, Steinemann uses bio-compatible insulation since inserting toxic materials into a user for no purpose makes no sense. See column 11, lines 10-13. Examples of such insulating materials are provided by Tyers and include Teflon. See column 2, lines 54-57.

It would have been obvious to one of ordinary skill in the art at the time of the invention to insulate plural conductors from each other as taught by Steinemann to prevent shorting there between or to the body of the user and to use bio-compatible insulation as taught by Steinemann since Juneau fails to specify the type of insulation to use and because using toxic insulation within a user's body makes no sense.

**Claim 2** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As best seen in figures 15 and 17, the components

of Juneau's hearing aid "extend medially" from the "medial side" of plate 22, which also comprises a "lateral side." Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 3** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Figure 16 depicts that the "plate member" 22 is "generally circular in shape." Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 4** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As shown in the rejection of claim 1, the components include a battery, microphone, amplifier and speaker, which are all "electronic hearing aid components" and as seen in figure 16, the plate member carries a "number of controls," e.g. 27, "for the electronic components on the lateral side." See column 6, lines 12-15. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 5** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses using a silicone primer, i.e. "bonding enhancer," between the body and plate. See column 7, lines 13-26. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 6** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. The body made of fill material 50 is disclosed as MDX-4-4210 silicone. See column 3, line 61, through column 4, line 4. Therefore,

Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 7** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the body is "silicone" with a "hardness between 3 and 40 Durometer Shore A." See column 3, line 61, through column 4, line 4. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 9** is limited to "the hearing aid of claim 7," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the "plate member" 22 is "acrylic." See column 7, lines 13-19. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 8** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the "plate member" 22 is "acrylic." See column 7, lines 13-19. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 10** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the body is "silicone" with a "hardness between 10 and 35 Durometer Shore A." See column 3, line 61, through column 4, line 4. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 11** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the body "anatomically fits

the contours of the ear canal.” See column 7, lines 51-60. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 12** is limited to “a hearing aid adapted for use in the ear canal of a user.” This claim recites essentially the same limitations as claim 4, and is rejected for the same reasons.

**Claim 13** is limited to “a hearing aid adapted for use in the ear canal of a user.” This claim recites essentially the same limitations as claim 4, and is rejected for the same reasons.

**Claim 14** is limited to “the hearing aid of claim 13,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the body is “silicone.” See column 3, line 61, through column 4, line 4. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 15** is limited to “the hearing aid of claim 13,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the body is “silicone” with a “hardness between 3 and 40 Durometer Shore A.” See column 3, line 61, through column 4, line 4. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 16** is limited to “the hearing aid of claim 1,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the “plate member” 22 is “acrylic.” See column 7, lines 13-19. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 17** is limited to “the hearing aid of claim 1,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As indicated in the rejection of claim 1, Juneau discloses a wiring harness 38 that interconnects the amplifier 34 and speaker 35. In addition, Juneau discloses a monofilament cantilever 55 corresponding to “a load carrying member for preventing at least some transfer of tensile load to the wiring harness.” See column 6, lines 47-65. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 18** is limited to “the hearing aid of claim 17,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. The filament 55 is disclosed by Juneau as providing “longitudinal stability.” See column 6, lines 61-65. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 19** is limited to “the hearing aid of claim 18,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Instead of using the cantilever 55, Juneau discloses using a “vent tube.” See column 6, lines 36-46. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 20** is limited to “the hearing aid of claim 13,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Juneau discloses that the components include a “multiple S-loop wiring harness 38.” See column 6, lines 25-35. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 21** is limited to “the hearing aid of claim 13,” as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As noted in the rejection of claim 1, the hearing

aid of Juneau is a CIC hearing aid. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 22** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As noted in the rejection of claim 1, the hearing aid of Juneau is a CIC hearing aid. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 23** is limited to "the hearing aid of claim 12," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As noted in the rejection of claim 1, the hearing aid of Juneau is a CIC hearing aid. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claims 24-29** are limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Each of these claims is directed to the particular thicknesses/diameters of various components of the cable of claim 1. It is submitted that the applicant has failed to provide any evidence or suggestion why these particular values are particularly beneficial. While it is noted that wires are typically chosen to accommodate a maximum current, doing so is simply obvious. In any case, the lack of disclosure concerning particular benefit or advantage and the fact that use of any cable with thickness appropriate for current between the amplifier and speaker is sufficient for operability renders these claims as the results of mere design choice.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the particularly claimed size values since there is no

unexpected advantage or rationale for doing so, which renders the resulting values the product of mere design choice.

**Claim 25** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers.

**Claim 26** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers.

**Claim 27** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers.

**Claim 28** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers.

**Claim 29** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers.

**Claim 30** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Kobayashi suggests using gold to plate the stainless steel conductors instead of silver. However, this deficiency is overcome by an obvious modification.

In particular, Official Notice is taken of the fact that silver provides conductivity superior to that of stainless steel and at a fraction of the cost of gold.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to plate with silver instead of gold to reduce cost.

**Claim 31** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Kobayashi discloses plating with gold to increase

conductivity. See column 1, lines 7-10. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 32** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Plating with gold as taught by Kobayashi inherently enables soldering. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 33** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. An exemplary bio-compatible coating suggested for use by Tyers is "Teflon." Therefore, Juneau in view of Kobayashi, Steinemann and Tyers and Tyers makes obvious all limitations of the claim.

**Claim 34** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. In general, Kobayashi teaches the necessity of plating stainless steel wires for the purpose of increasing their low conductivity, however, this general teaching does not suggest "copper flash coating."

Official Notice is taken of the fact that copper flash coating was well known for increasing the conductivity of wires.

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform copper flash coating on a stainless steel wire to increase its conductivity as was notoriously well known in the art.

**Claim 35** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. Kobayashi discloses plating each stainless steel

wire used. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

**Claim 36** is limited to "the hearing aid of claim 1," as covered by Juneau in view of Kobayashi, Steinemann and Tyers. As shown in claim 1, it is obvious to insulate a wire. Therefore, Juneau in view of Kobayashi, Steinemann and Tyers makes obvious all limitations of the claim.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

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wfb



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**SUPERVISORY PATENT EXAMINER**